

07/31/00  
883 U.S. PTO

08-02-00

A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

"EXPRESS MAIL" MAILING LABEL

NUMBER **EL542892789US**

DATE OF DEPOSIT **July 31, 2000**

I HEREBY CERTIFY THAT THIS CORRESPONDENCE IS BEING DEPOSITED WITH THE UNITED STATES POSTAL SERVICE "EXPRESS MAIL POST OFFICE TO ADDRESSEE" SERVICE UNDER 37 CFR 1.10 ON THE DATE INDICATED ABOVE AND IS ADDRESSED TO: BOX PATENT APPLICATION, COMMISSIONER OF PATENTS, WASHINGTON, DC 20231-0001.

TYPED NAME **Grace de Bos**

SIGNED

*Grace de Bos*

jc784 U.S. PTO  
09/628567  
07/31/00

Date: **July 31, 2000**

File No. **A-69366/MAK/LM**

Box PATENT APPLICATION  
Commissioner of Patents  
Washington, DC 20231-0001

Sir:

Transmitted herewith for filing is the patent application of inventor(s):

**Winifred Liu, Sulak Soysa,  
James C. Lungaro, Llavanya Fernando, and Simon Lee**

For:

**AN iPOS TRANSACTION TERMINAL**

Enclosed are also:

- ☐ Information Disclosure Statement, PTO 1449 & \_\_\_ references
- ☒ **14** sheets of Specification, Abstract and Claims
- ☒ **5** sheets of drawings. Formal \_\_\_, Informal **X**
- ☐ An Assignment of the invention to: \_\_\_\_\_  
(cost of recording to be charged to Deposit Account No. 06-1300 (Order No. /))
- ☐ Power of Attorney by Assignee
- ☐ Combined Declaration and Power of Attorney for Patent Application
- ☒ Declaration for Patent Application (**UNSIGNED**)
- ☐ Associate Power of Attorney
- ☒ Small Entity Status Declaration Under 37 CFR 1.9(f) and 1.27(b) (**SIGNED**)

	(Col. 1) NO. FILED	(Col. 2) NO. EXTRA	SMALL ENTITY		OTHER THAN SMALL ENTITY	
			RATE	FEE	RATE	FEE
BASIC FEE			\$	345	\$	690
TOTAL CLAIMS	14 - 20 =	0	x 9 =	\$ 0	x 18 =	\$
INDEP CLAIMS	2 - 3 =	0	x 39 =	\$ 0	x 78 =	\$
MULTIPLE DEPENDENT CLAIM PRESENTED [ ]			+ 130 =	\$	+ 260 =	\$
If the difference in Col 1 is less than zero, enter "0" in Col. 2			TOTAL	\$ 345	TOTAL	\$ 0

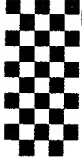
- ☒ Our check No. **31227** in the amount of **\$345.00** to cover the filing fee is enclosed.
- ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, including extension fees, or credit any overpayment to Deposit Account No. 06-1300 (our Order No. A-69366/MAK/LM).

Respectfully submitted,

*Larry Mendenhall*  
Larry Mendenhall  
Reg. No. 38,555

**Correspondence Address:**

FLEHR HOHBACH TEST ALBRITTON & HERBERT LLP  
Four Embarcadero Center, Suite 3400  
San Francisco, California 94111-4187  
Telephone: 415/781-1989  
Fax: 415/398-3249



Applicant or Patentee: LIU et al. Attorney Docket No.:  
Serial or Patent No.: UNKNOWN A-69366/MAK/LM  
Filed or Issued: HEREWITH

For: AN IPPOS TRANSACTION TERMINAL

**VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS**  
**(37 CFR 1.9(f) and 1.27(c)) - SMALL BUSINESS CONCERN**

I hereby declare that I am  
☐ the owner of the small business concern identified below:  
☒ an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF SMALL BUSINESS CONCERN: @POS.COM, INC.  
ADDRESS OF SMALL BUSINESS CONCERN: 3051 N. 1st Street  
San Jose, California 95134

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.12, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, United States Code, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention entitled AN IPPOS TRANSACTION TERMINAL described in

☒ the specification filed herewith  
☐ application serial no. \_\_\_\_\_, filed \_\_\_\_\_  
☐ patent no. \_\_\_\_\_, issued \_\_\_\_\_

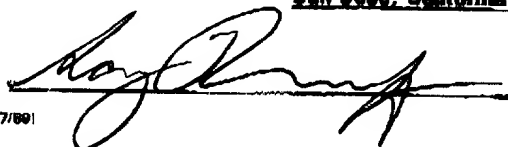
If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights in the invention is listed below\* and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

\* NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

FULL NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization  
FULL NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
☐ Individual ☐ Small Business Concern ☐ Nonprofit Organization

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b)). I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING Gary Rummelhoff  
TITLE IN ORGANIZATION CFO  
ADDRESS OF PERSON SIGNING 3051 N. 1st Street  
San Jose, California 95134

SIGNATURE  DATE 7/31/00  
Form 1, 27  
Rev. 6/02 (PTO Rev. 7/00) (SF-1025500)

5

PATENT APPLICATION

**AN IPOS TRANSACTION TERMINAL**

10

**Inventors:**

**Winifred Liu,**  
a citizen of Taiwan, residing at  
43555 Grimmer Boulevard, Apt. I-277  
Fremont, California 94538

15

**Sulak Soysa,**  
a citizen of Sri Lanka, residing at  
5925 Dunn Avenue  
San Jose, California 95123

20

**James C. Lungaro,**  
a citizen of the United States of America, residing at  
1493 Brookdale Drive  
San Jose, California 95125

25

**Llavanya Fernando,**  
a citizen of the United States of America, residing at  
1310 Rimrock Drive  
San Jose, California 95120

30

**Simon Lee,**  
a citizen of the United States of America, residing at  
48889 Crown Ridge Common  
Fremont, California 94539

35

**Assignee:**

**@POS.COM,**  
a Delaware corporation,  
3051 North 1st Street  
San Jose, California 95134

40

**FLEHR HOHBACH TEST ALBRITTON & HERBERT LLP**

4 Embarcadero Center, Suite 3400  
San Francisco, CA 94111-4187

45

(415) 781-1989

## AN IPOS TRANSACTION TERMINAL

5

### BACKGROUND

This invention relates to point-of-sale POS systems and retail stores. More specifically, this invention relates to transaction terminals at POS locations in small retail stores.

10

Brick-and-mortar retailers may be divided into three classes based on the number of registers at a store. A tier-1 retailer may have, say, twenty-six (26) or more cash registers at one store. A tier-2 retailer may have 3 to 25 cash registers. Tier-3 retailers have one or two cash register per store. (These tiers may overlap at their boundaries.)

15

The cash registers at the tier-1 and tier-2 stores, termed "electronic cash registers" or "ECRs," tend to be qualitatively different from the registers at tier-3 stores. A tier 1-tier 2 cash register may cost \$5,000 or more. For its expense, an ECR is programmed or programmable to handle activities beyond that of a cash register. In an integrated POS system, an ECR may communicatively couple with a POS device such as a check reader or a magnetic-strip reader. The ECR has sufficient intelligence to control the POS device, say, to obtain credit- or debit-card information from the magnetic-strip reader, combine it with the transaction total that the ECR has computed and forward it all to an external payment processor for authentication and approval. The IBM ECR model 4690, available from International Business Machine Corporation, Armonk, NY, is an example of a prior-art ECR.

20

25

In comparison, the cash registers of tier-3 retailers are typically much less sophisticated. These cash registers cost about \$500 to \$800 — significantly less than the tier 1-tier 2 ECRs. For their affordability, stand-

30

beside cash registers are not able to control POS devices co-located with the cash register. Any magnetic-strip reader located with such a tier-3 register, for example, itself possesses the intelligence to send card information to a remote payment processor for authentication.

5                   **Figure 1** illustrates a prior-art POS transaction system **200** for a tier-3 POS location. The POS transaction system **200** includes a cash register **210**, a cashier-side keypad **220** (optionally integrating a check/magnetic-strip reader **221** and a printer **222**), a PIN pad **230** and a communications link **240**. The link **240** communicatively connects the keypad **220** and the  
10   PIN pad **230**.

                  In a retail system including the transaction system **200** and a remote payment processor **300**, a link **400** communicatively connects the transaction system **200** — through its keypad **220** — to the payment processor **300**. Notably, the cash register **210** and the cashier-side keypad  
15   **220** do not communicate.

                  The OMNI models 460 and 470, available from Verifone, a division of Hewlett-Packard Company, Palo Alto, California, with their printer 900 and CR 600 check-reader options, are examples of prior art keypads **220**. The OMNI 460 has automatic-payment-processing and receipt-  
20   printing capabilities. The OMNI 470 combines a payment terminal, a printer and a PIN pad. Both OMNI terminals can transfer data via modem. Eclipse-brand payment terminals convert paper checks into electronic items for instant funds transfer from a customer's account to the merchant's.

25                   Hypercom, Inc., Phoenix, Arizona, makes T7 and T8 series of transaction terminals. The T7 series include a 35-key keyboard, LCD display, a card reader and a receipt printer.

                  IVI Checkmate, Roswell, Georgia, makes an eN and Elite series of transaction terminals with PIN-pad and receipt-printer peripherals. Most  
30   of these terminals have direct-dial capability, integrated card readers and an LCD. Functions such as check reading, thermal receipt printer and

wireless connection are optional.

In this tier-3 environment, processing a credit-card payment in the tier-3 environment involves the cashier determining the dollar amount of the transaction using the cash register **210** and sliding the credit card through the check/magnetic-strip reader **221**. The cashier then enters the transaction dollar amount into the keypad **220**. The MSR **221** provides the requisite card information such as card number and expiration date. The keypad **220** then (dials and) communicates with the remote payment processor **300** to validate the transaction. On validation, the printer **222** prints a paper receipt which the customer then signs.

Processing a debit-card payment is similar: Instead of signing a paper receipt, the customer enters a PIN on the PIN pad.

Such a credit or debit transaction may take 6 to 22 seconds, depending on the type of connection with the remote payment processor. The customer idly waits for the transaction approval. Except for the entry of a PIN (if ever necessary), the customer does not interact at all with the transaction system **200**.

While such a setup allows the merchant to use credit- or debit-cards as payment for goods or services at a cost much less than with ECRs, the setup obliges the retailer to forgo certain additional sources of revenue. The conversion of the customer wait time into money, for example, is a lost opportunity.

Accordingly, the art seeks a tier-3 POS environment that is less costly than the tier-1 and tier-2 environments but nonetheless offers the opportunity to convert the idle times of the customer into potential revenue.

These and other goals of the invention will be readily apparent to one of skill in the art on reading the background above and the description below.

## SUMMARY

Herein are described apparatus and methods for transaction processing. The apparatus may be a transaction terminal including a keypad, a circuit for interacting with the transaction customer and a link communicatively connecting the keypad and the customer-interaction circuit.

The cashier may interact with the keypad, while the customer (and not the cashier) may interact with the customer-interaction circuit.

10 The link may communicate a dollar amount for the transaction between the keypad and the customer-interaction circuit.

Accessories for the keypad may include a check reader, a display or a receipt printer. Accessories for the customer-interaction circuit may include a smart-card reader, a magnetic-strip reader and biometric readers.

15

The customer-interaction circuit may include a port for connection to a remote service provider. That port may be the only remote-access port in the transaction terminal.

The customer-interaction circuit may include a virtual keypad, and the circuit itself maybe programmed to capture a personal identifier number by means of that virtual keypad. The customer-interaction circuit may include virtual paper, and the circuit itself may be programmed to capture a signature by means of the virtual paper.

20

A cash register at the POS location with the transaction terminal may not be communicatively coupled to the transaction terminal.

25

A method for authenticating a transaction at a POS location may include engaging in a transaction at the POS location, thereby generating a dollar amount for the transaction. A transaction dollar amount is entered into a keypad and then communicated from the keypad to a customer-interaction circuit. Details of the transaction, including the dollar amount, are communicated to a remote service

30

provider for authentication. During the step of entering and both steps of communicating, the customer-interaction circuit interacts with the customer. Between the steps of communicating, the transaction dollar amount maybe displayed on the customer-interaction circuit for the customer, and the customer may approve the transaction dollar amount.

## BRIEF DESCRIPTION OF THE DRAWINGS

**Figure 1** illustrates a prior-art POS transaction system for a tier-3 POS location.

**Figure 2** illustrates a retail system incorporating an embodiment of the invention.

**Figure 3** illustrates the point-of-sale (POS) transaction terminal of **Figure 4**, according to one embodiment of the invention.

**Figure 4** illustrates a transaction system incorporating an embodiment of the invention.

**Figure 5** schematically illustrates a customer-response unit, according to one embodiment of the invention.

## DESCRIPTION OF SPECIFIC EMBODIMENTS

**Figure 2** illustrates a retail system **100** incorporating an embodiment of the invention. The retail system **100** includes one or more merchants **110**, one or more remote payment processors **120**, one or more electronic-receipt service providers **140**, one or more customer-relations managers **150** and a communications link **130**.

The link **130** communicatively couples the merchant **110** to the service providers **120, 140, 150**. Where the link **130** is an internet, the merchants **110** and service providers **120, 140, 150** are each a host on the internet **130**. Any one host may communicate with any other one using that internet **130**. (Any number of these "hosts" may be only nominally so, their actual status more likely to depend on the directness of their connection to that internet **130**, for example, through optional service



providers not shown.)

A merchant **110** may be a small retailer with, say, 1 or 2 cash registers. Example merchants **110** include convenience stores, restaurants, hospitality providers (barkeepers, innkeepers, etc.) and rental-car agencies.

5 A service provider **140** may provide an electronic-receipts repository for receiving and storing transaction records. The service provider may provide an electronic-receipts service for manipulating a transaction record — retrieving and forwarding it on demand, for example. The website [www.ReceiptCity.com](http://www.ReceiptCity.com), made available by ReceiptCity.com, 10 San Jose, California, is an example of an electronic-receipts service **140**.

The service providers **120** support the transactions of a merchant **110**. An application service provider (ASP) **120** may verify credit or debit cards or may authorize credit- or debit-card transactions.

The service-provider **150** may be an advertisement server. 15 Doubleclick.com, New York, New York, is an example of a service provider **150**. Indeed, the service provider **150** may serve up any content that a customer may find interesting or that may provide useful information. (For example, the lack of an (affirmative) customer response to an advertisement, promotion or survey is of itself an interesting response.)

20 The merchant **110** includes a transaction system **111** incorporating an embodiment of the invention. **Figure 4** illustrates that POS transaction system **111**, including a cash register **210** and an iPOS transaction terminal **1111**.

**Figure 3** illustrates an interactive point-of-sale (iPOS) transaction 25 terminal **1111** according to one embodiment of the invention. The iPOS transaction terminal **1111** may include a prior-art remote cashier-side keypad (RCK) **220**, a customer-response unit (CRU) **500** and a communications link **600**. The link **600** communicatively couples the RCK **220** and the CRU **500**.

30 The RCK **220** typically includes a keypad **221** and an LCD display **221**, and less often a printer **222**, a check reader **221** or both. In use,

the RCK assists the cashier. The RCK **220** may receive from the cashier the dollar amount of a given transaction for debit- or credit-payment processing, may print receipts or may read checks.

The CRU **112** interacts with the customer to complete or  
5 enhance the transaction. **Figure 5** schematically illustrates a CRU **500**, according to one embodiment of the invention. The CRU **500** may include a processor sub-system **510**, a biometrics sub-system **520**, an input sub-system **530**, an output sub-system **540**, a payment sub-system **550**, a communications sub-system **560** and a bus **570**. The bus **570**  
10 communicatively couples all of the biometrics, input, output, payment and communications sub-systems **520**, **530**, **540**, **550**, **560** to each other and to the processor sub-system **510**.

The processor sub-system **510** includes a CPU **511**, a memory **512** and a bus **513**. The memory **512** includes random-access memory  
15 (RAM) **5122** and may include an optional flash memory **5121**. The bus **513** communicatively couples the CPU **511** and the memory **512** and may be wholly or partly integral with the bus **570**.

The memory **512** includes software (not shown) controlling the CRU **500** according to its roles described herein. The memory **512** also  
20 contains drivers and other software as necessary to operate the input, output and payment sub-systems **530**, **540**, **550**.

The biometrics sub-system **520** electronically captures biological information such as fingerprints, retinal images or facial features.

The input sub-system **530** may include a touch screen **531**, and  
25 the output sub-system **540** may include a display **541** that is preferably a color liquid crystal display (LCD). The touch pad **531** and the display **541** may combine to create a virtual PIN pad for numeric entry or virtual paper for electronic signature capture, as are known in the art.

The payment sub-system **550** may include a magnetic-strip  
30 reader **551**, a smart-card processor **552** and a bus **553**. The bus **553** may communicatively couple the magnetic-strip reader **551**, the smart-card

processor **552** and the bus **570**. The bus **553** may be wholly or partly integral with the bus **570**. (In one embodiment, the input system can also handle the other types of payment mentioned herein.)

The communications sub-system **560** includes a low-bandwidth port **564**, a high-speed communications port **561** and a bus **565**. The bus **565** communicatively couples the ports **564**, **561** to the bus **570**. The bus **565** may be wholly or partly integral with the bus **570**.

The low-bandwidth port **564** is preferably serial, particularly an RS-232 or RS-485 port. The high-bandwidth port **564** is preferably a local or wide area network connection, such as the Internet over a digital subscriber loop or line (DSL).

In an example transaction, a customer uses the CRU **112** to select a payment option. In response, the CRU **112** prepares to accept the selected payment method. The customer inserts his card, swipes his card, inserts his check or otherwise presents his payment method as determined by the chosen option. For debit cards, the customer enters a PIN using the virtual PIN pad of the CRU **112**.

At some point before the CRU **112** completes its communications with the remote payment processor **120**, the cashier enters the dollar amount of the transaction, using the RCK **220**. The cashier's data entry is typically asynchronous to the customer's activities. The cashier-side keypad **220** communicates this dollar-amount information to the CRU **112**, using the link **113**. The CRU **112** transfers this and other transaction information to the remote payment processor **120** and waits for an approval.

While the CRU **112** waits for the service provider **120** to validate the transaction, the CRU **112** communicates with the customer-relations manager **150** over the link **130** to receive content for display to the customer. The CRU **112** typically also displays transaction information (and card information, if applicable).

On approval of a credit transaction, the CRU **112** prompts for

the customer's signature. The signature may be electronic.

The CRU **112** prints a receipt which the cashier hands to the customer. The CRU **112** then may transmit a record of the transaction (and transaction details such as an electronic signature) to the electronic-

5 receipts service **140**.

The retail system **100** offers tier-3 retailers targeted-marketing opportunities at the point of sale while processing credit and debit transactions.

The numerous embodiment of the iPOS transaction terminal  
10 permits the small, tier-3 retailer to minimize cost by choosing an iPOS transaction terminal **1111** configured exactly for that small retailer's business. The retailer need not pay for functionality that it may never use.

Indeed, the invention now being fully described, many  
15 changes and modifications that can be made thereto without departing from the spirit or scope of the appended claims will be apparent to one of ordinary skill in the art.

This specification incorporates by reference all publications and patent applications mentioned herein, to the same extent if the  
20 specification had specifically and individually incorporated by reference each such individual publication or patent application.

WHAT IS CLAIMED IS:

- 1                    **1.**     A POS transaction terminal comprising:  
2                    a keypad;  
3                    a circuit for interacting with a customer; and  
4                    a link, communicatively connecting the keypad and the  
5                    customer-interaction circuit.
  
- 1                    2.     The transaction terminal of claim **1**, wherein the keypad  
2 comprises  
3                    a keypad for interacting with a cashier; and  
4 wherein the customer-interaction circuit comprises  
5                    a circuit for interacting with the customer and not the cashier.
  
- 1                    3.     The transaction terminal of claim **1**, wherein the link  
2 comprises  
3                    a link for communicating between the keypad and the  
4                    customer-interaction circuit a dollar amount of a transaction.
  
- 1                    4.     The transaction terminal of claim **1**, wherein the keypad  
2 comprises  
3                    accessories including one member of the following set of  
4                    accessories: check reader, display and receipt printer.
  
- 1                    5.     The transaction terminal of claim **1**, wherein the  
2 customer-interaction circuit comprises  
3                    accessories including one member of the following set of  
4                    accessories: smart-card reader, magnetic-strip reader and biometric  
5                    scanners.

1                   6.     The transaction terminal of claim **1**, wherein the  
2 customer-interaction circuit comprises  
3                   a port for connecting via a communications link to a remote  
4                   service provider.

1                   7.     The transaction terminal of claim 6, wherein the  
2 transaction terminal comprises only one port for connecting via a  
3 communications link to any remote service provider.

1                   8.     The transaction terminal of claim **1**, wherein the  
2 customer-interaction circuit comprises  
3                   a virtual keypad.

1                   9.     The transaction terminal of claim 8, wherein the  
2 customer-interaction circuit is programmed to capture a personal identifier  
3 number (PIN) by means of the virtual keypad.

1                   10.    The transaction terminal of claim **1**, wherein the  
2 customer -interaction circuit comprises  
3                   virtual paper.

1                   11.    The transaction terminal of claim 10, wherein the  
2 customer-interaction circuit is programmed to capture a signature by  
3 means of the virtual paper.

1                   **12.**    A transaction system comprising:  
2                   a cash register; and  
3                   the transaction terminal of claim **1**,  
4 wherein the cash register and the transaction terminal are co-located at a  
5 POS location but are not communicatively coupled.

1                   **13.** A method for authenticating a transaction at a POS  
2 location, the method comprising:  
3                   engaging in a transaction at a POS location, thereby  
4                   generating a dollar amount for the transaction;  
5                   entering that transaction dollar amount into a keypad;  
6                   then communicating the transaction dollar amount from the  
7 keypad to a customer-interaction circuit;  
8                   then communicating details of the transaction, including the  
9 dollar amount, to a remote service provider for authentication; and  
10                  during the step of entering and both steps of communicating,  
11                  interacting with the customer at the customer-interaction circuit.

1                   14. The method of claim **13**, wherein, between the steps of  
2 communicating, the following step is performed:  
3                   displaying the transaction dollar amount to the customer-  
4 interaction circuit for the customer; and  
5                   receiving approval from the customer for the transaction dollar  
6 amount.

# AN IPOS TRANSACTION SYSTEM

## ABSTRACT OF THE DISCLOSURE

Apparatus and methods for transaction processing. The apparatus may be a transaction terminal including a keypad, a circuit for interacting with the transaction customer and a link communicatively connecting the keypad and the customer-interaction circuit. The cashier may interact with the keypad, while the customer (and not the cashier) may interact with the customer-interaction circuit. The link may communicate a dollar amount for the transaction between the keypad and the customer-interaction circuit. Accessories for the keypad may include a check reader, a display or a receipt printer. Accessories for the customer-interaction circuit may include a smart-card reader, a magnetic-strip reader and biometric readers. The customer-interaction circuit may include a port for connection to a remote service provider. That port may be the only remote-access port in the transaction terminal. The customer-interaction circuit may include a virtual keypad, and the circuit itself maybe programmed to capture a personal identifier number by means of that virtual keypad. The customer-interaction circuit may include virtual paper, and the circuit itself may be programmed to capture a signature by means of the virtual paper. A cash register at the POS location with the transaction terminal may not be communicatively coupled to the transaction terminal.

20



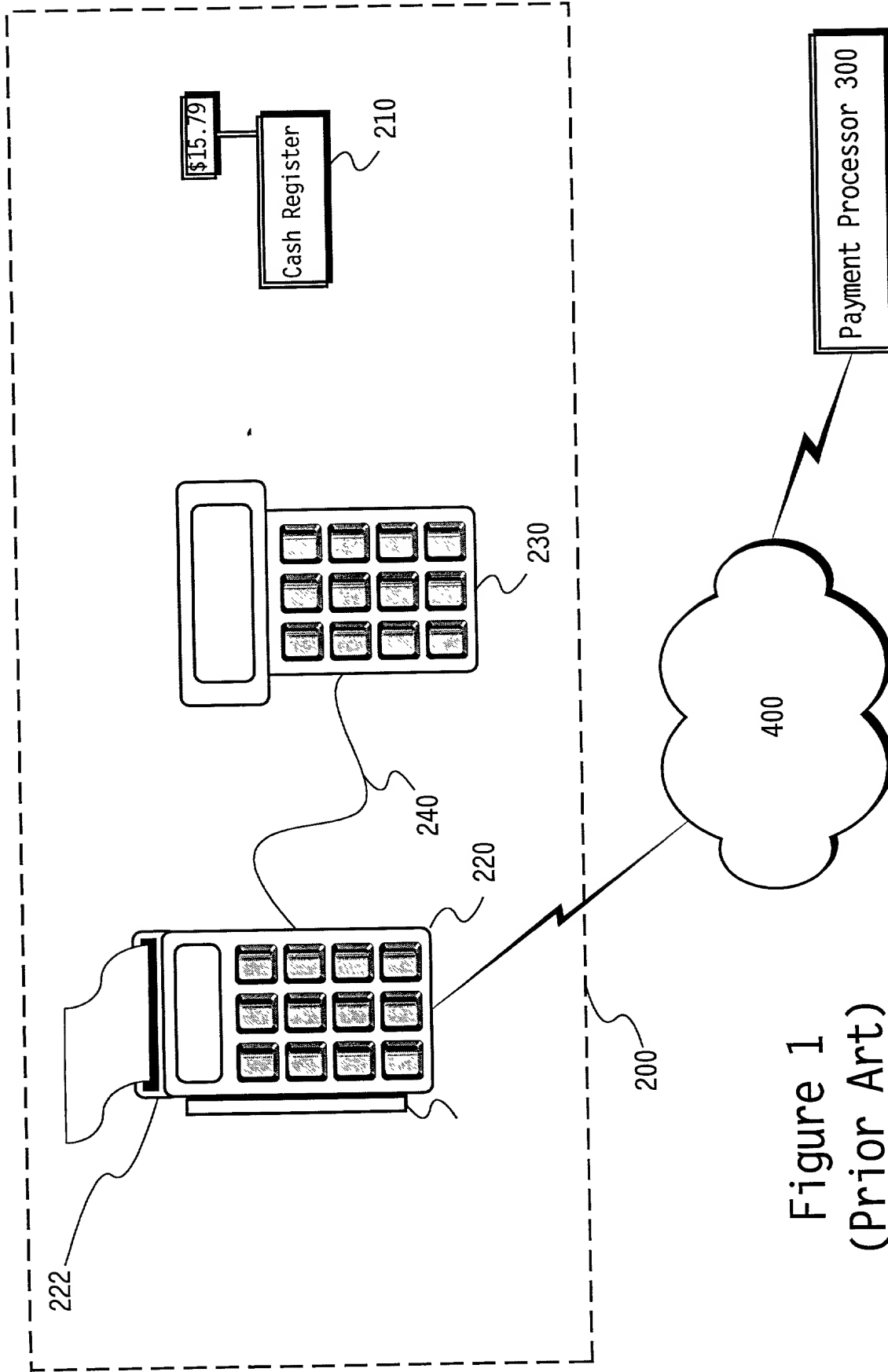
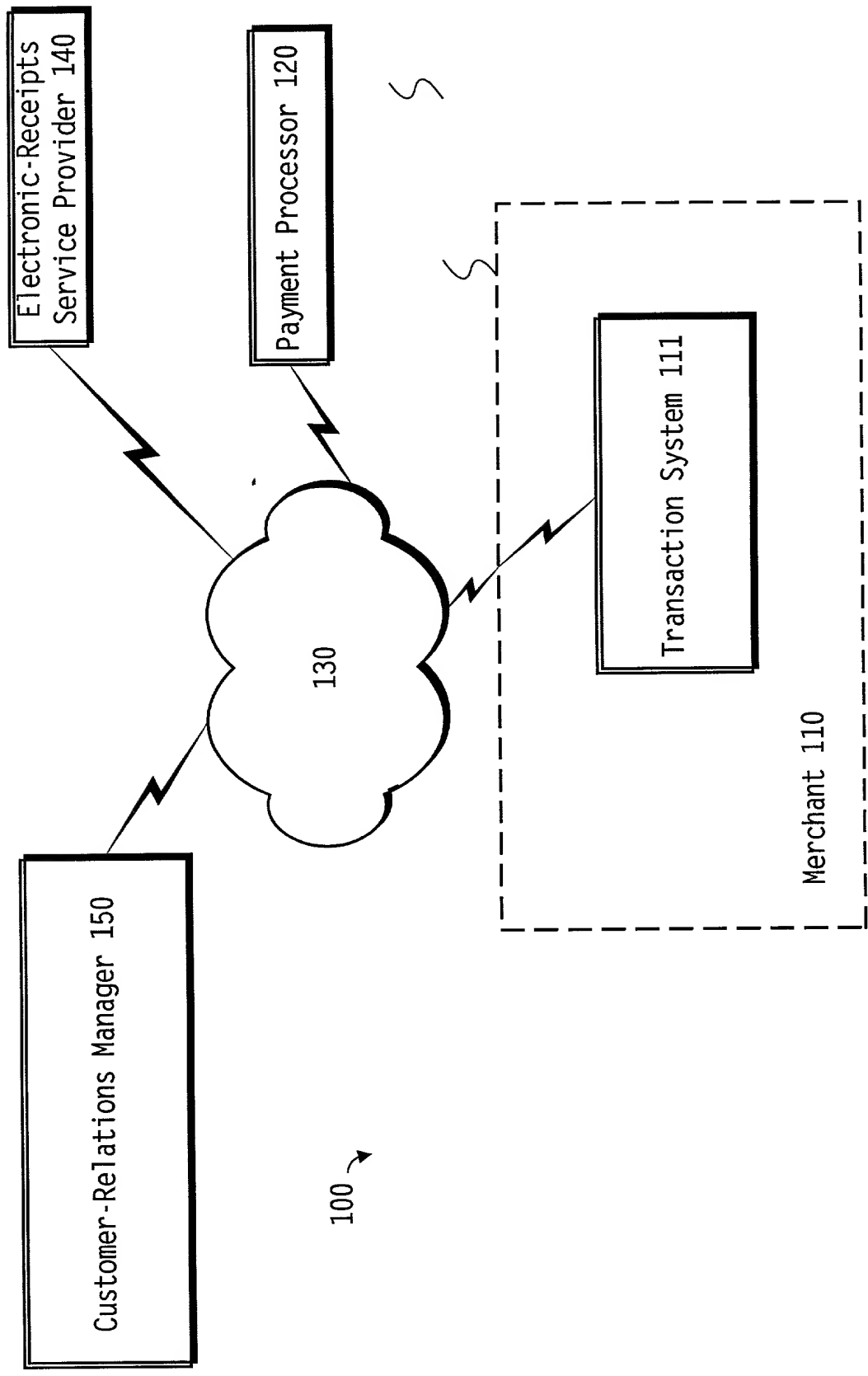


Figure 1  
(Prior Art)



2/

Figure 2

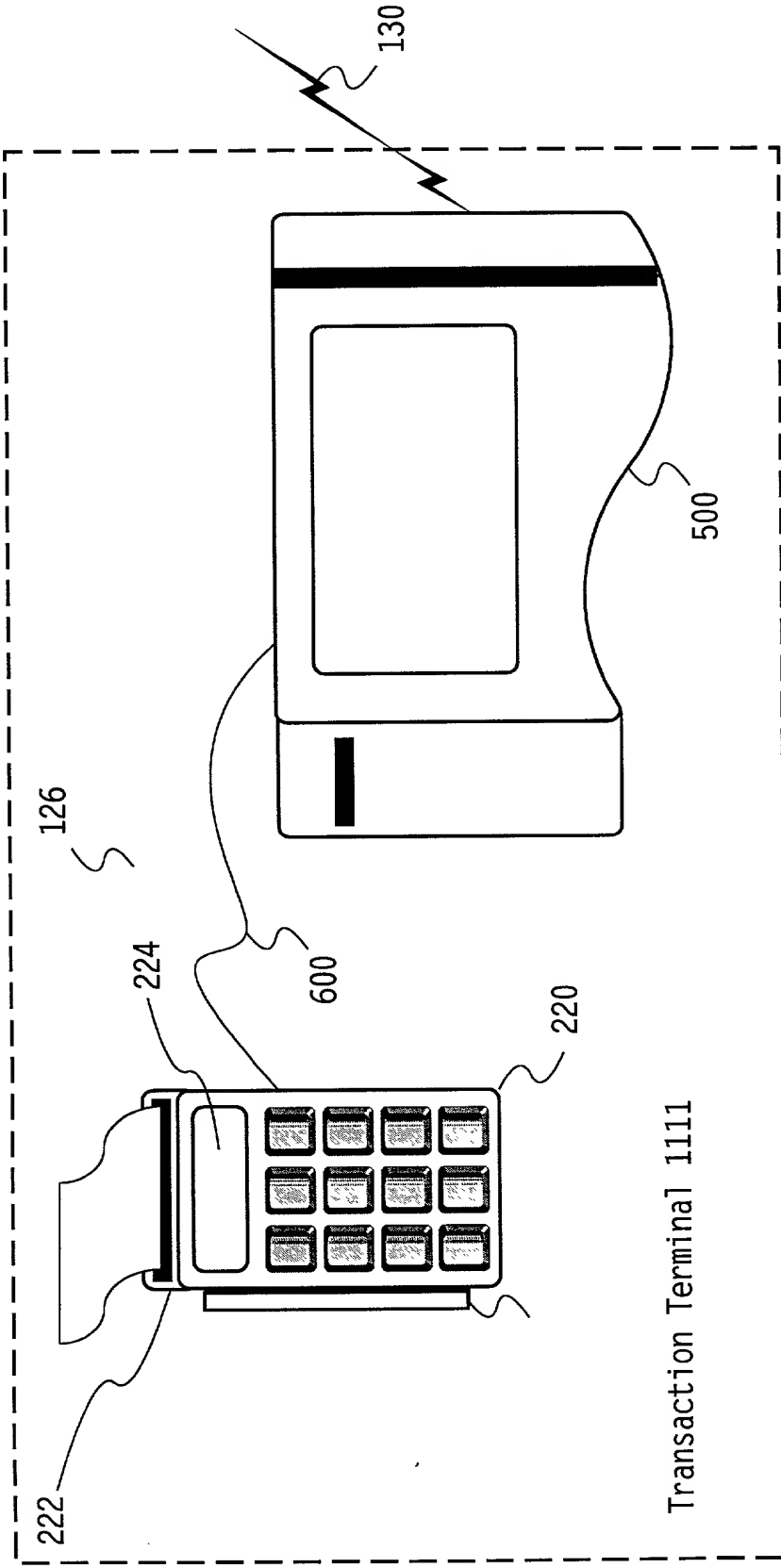


Figure 3

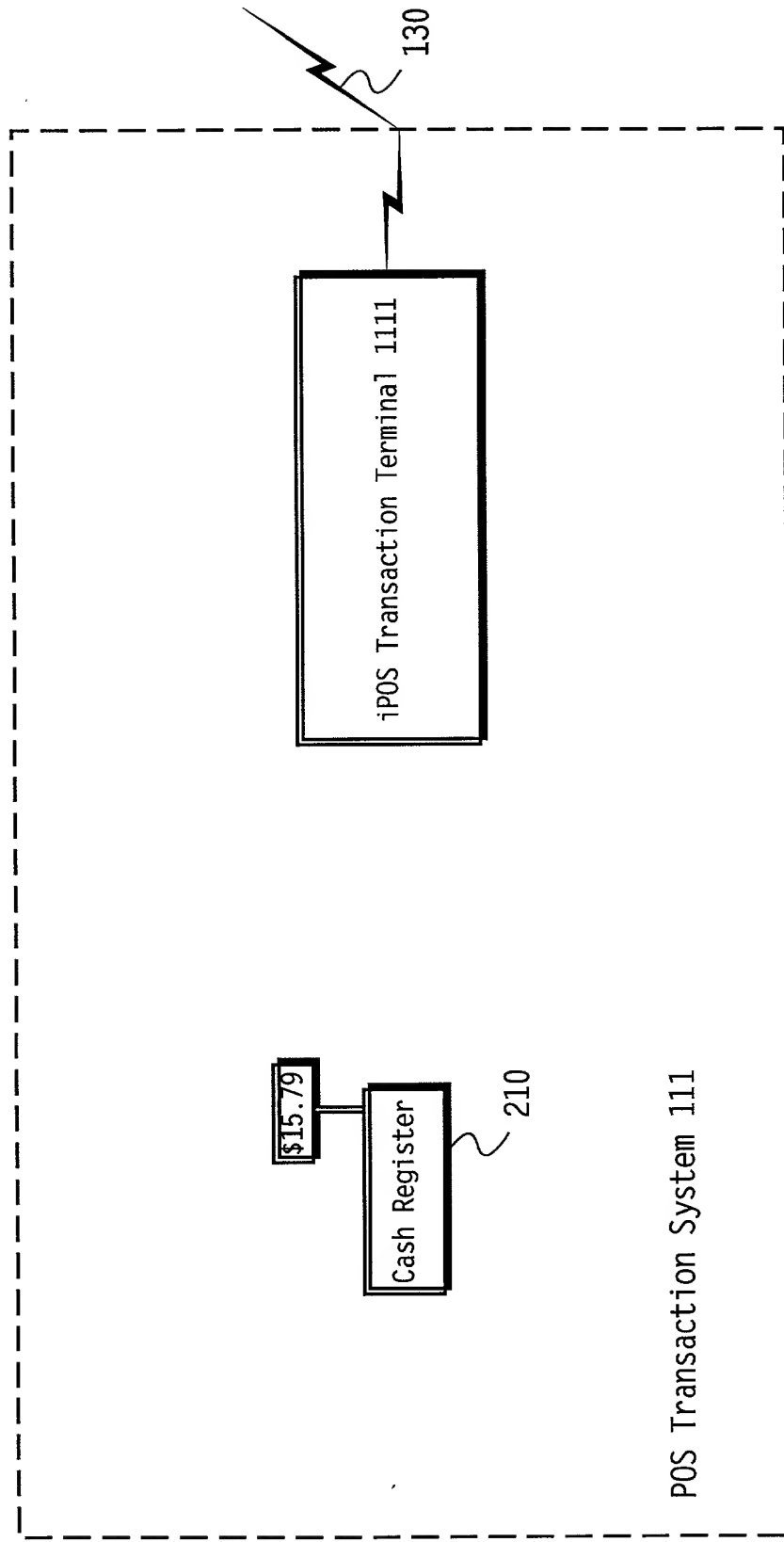
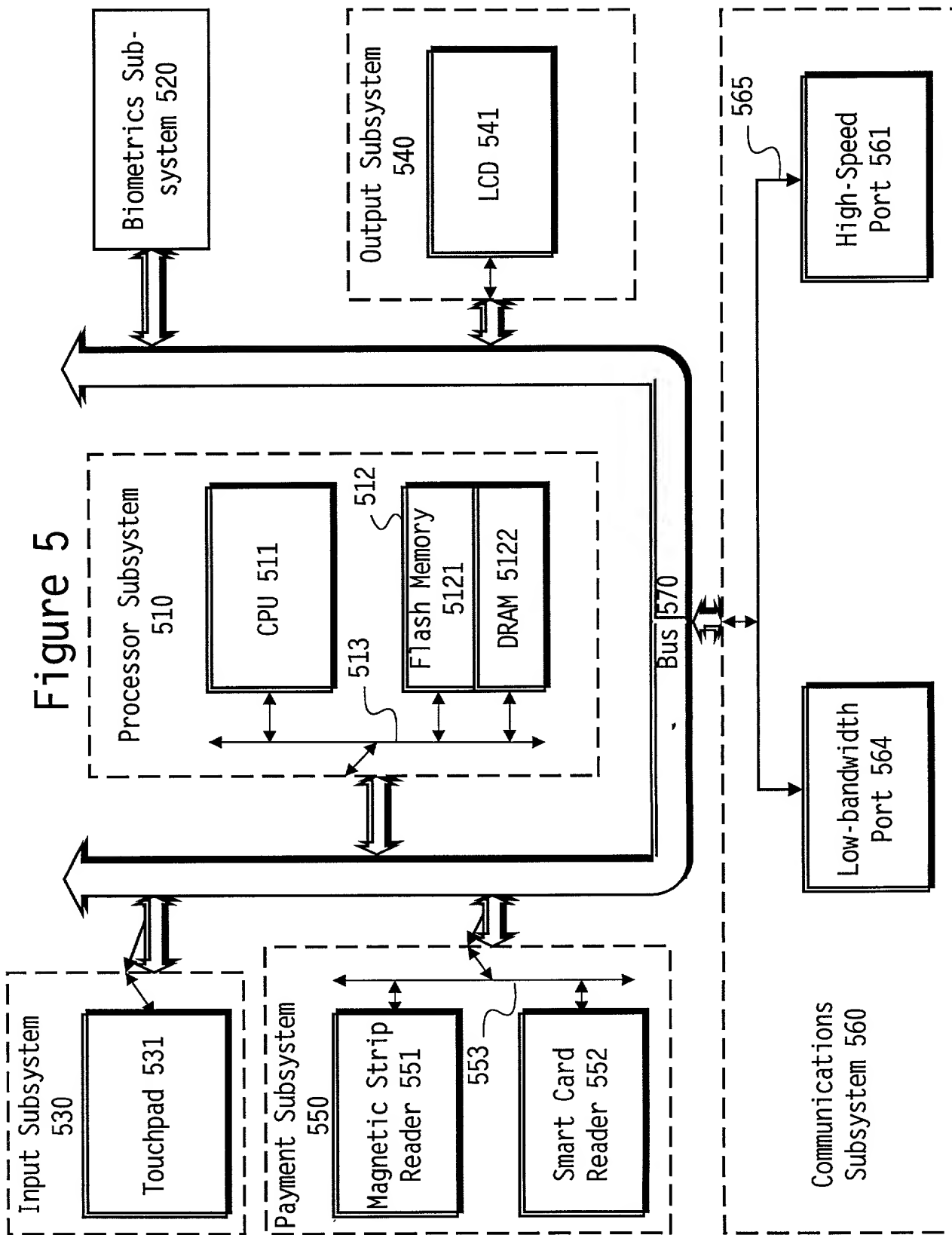


Figure 4



## DECLARATION FOR PATENT APPLICATION

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled AN iPOS TRANSACTION TERMINAL, the specification of which

(check one)

☒ is attached hereto.

☐ was filed on \_\_\_\_\_ as  
Application Serial No. \_\_\_\_\_  
and was amended on \_\_\_\_\_  
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Patent Office all information known to me to be material to patentability as defined in 37 CFR 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose to the Patent Office all information known to me to be material to patentability as defined in 37 CFR 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status) (patented, pending, abandoned)
_____ (Application Serial No.)	_____ (Filing Date)	_____ (Status) (patented, pending, abandoned)

Direct all telephone calls to LARRY MENDENHALL at 415-781-1989.

Address all correspondence to:

FLEHR HOHBACH TEST  
ALBRITTON & HERBERT LLP  
Suite 3400, Four Embarcadero Center  
San Francisco, California 94111-4187

File No. A-69366/MAK/LM

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Title 18, United States Code, §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of  
first inventor: WINIFRED LIU

Inventor's signature: [UNSIGNED]

Date: \_\_\_\_\_

Residence: FREMONT, CALIFORNIA

Citizenship: TAIWAN

Post Office Address: 43555 GRIMMER BOULEVARD, APT. 1-277, FREMONT, CALIFORNIA 94538

Full name of  
second inventor: SULAK SOYSA

Inventor's signature: [UNSIGNED]

Date: \_\_\_\_\_

Residence: SAN JOSE, CALIFORNIA

Citizenship: SRI LANKA

Post Office Address: 5925 DUNN AVENUE, SAN JOSE, CALIFORNIA 95123

Full name of  
third inventor: JAMES C. LUNGARO

Inventor's signature: [UNSIGNED]

Date: \_\_\_\_\_

Residence: SAN JOSE, CALIFORNIA

Citizenship: UNITED STATES OF AMERICA

Post Office Address: 1493 BROOKDALE DRIVE, SAN JOSE, CALIFORNIA 95125

Full name of  
fourth inventor: LLAVANYA FERNANDO

Inventor's signature: [UNSIGNED]

Date: \_\_\_\_\_

Residence: SAN JOSE, CALIFORNIA

Citizenship: UNITED STATES OF AMERICA

Post Office Address: 1310 RIMROCK DRIVE, SAN JOSE, CALIFORNIA 95120

Full name of  
fifth inventor: SIMON LEE

Inventor's signature: [UNSIGNED]

Date: \_\_\_\_\_

Residence: FREMONT, CALIFORNIA

Citizenship: UNITED STATES OF AMERICA

Post Office Address: 48889 CROWN RIDGE COMMON, FREMONT, CALIFORNIA 94539

1025655